

# Establishing conceptual and functional links between S-BPM and business rules

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## BPM and BRM – two different worlds

### BPM – Business Process Management

- Modeling machine-executable business processes
- Standardized notations
- Interoperability (Enterprise Application Integration)



### BRM – Business Rule Management

- Derive rules from organization's strategy
- Manage rules from central repository
- Fine grained control of organizational goals



## Common Goal - Bridging gaps

### Business – IT gap

Management perspective vs. IT perspective

Establish fully integrated IT enactment

Requires adaptive and agile systems

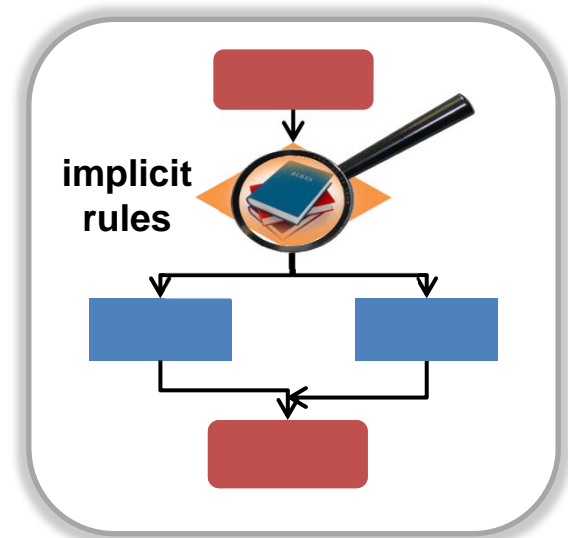


### BPM – BRM gap

Processes implicitly contain rules

Rules not directly executable

Different modeling environments



## Starting with natural language

### S-BPM approach

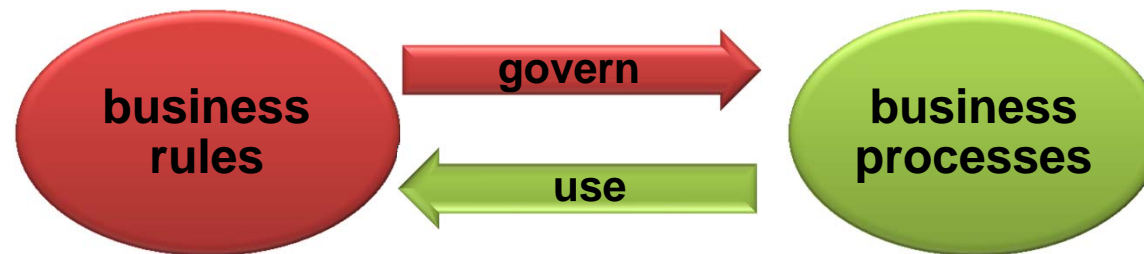
- Using subject-predicate-object modeling paradigm
- Easy to learn and reusable (process repository)
- Understandable by non-IT personnel

### BR approach

- Based on common business vocabulary
- Using „language building blocks“ as constraints
- Expressed by IF-THEN statements (Event-Condition-Action)



## Integration of the concepts



### ■ Conceptual requirements

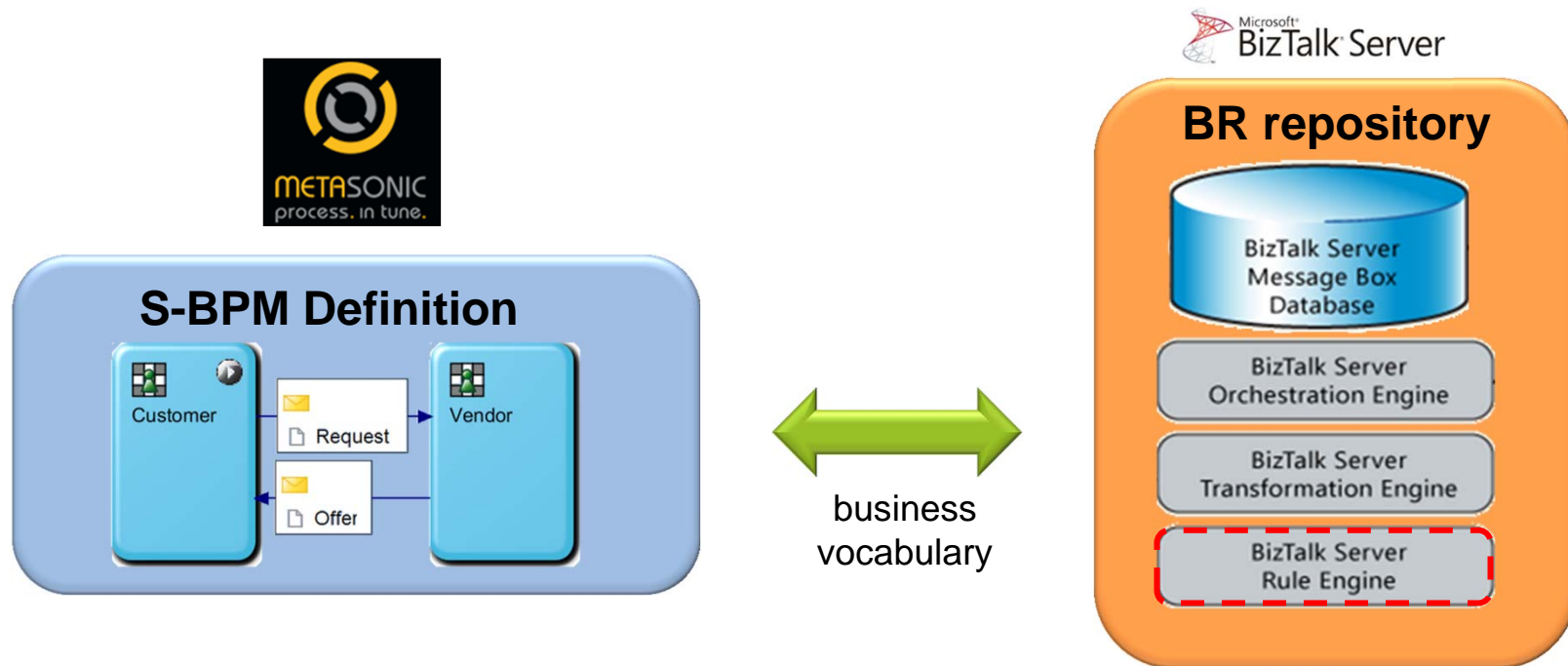
- Enrich S-BPM with business rules (and *vice versa*)
- Technically & conceptually preserve general BPM & BRM approaches
- Make use of existing standards (as implemented by modeling tools)

### ■ Technical requirements

- Split rules into fragments → allow flexible modifications
- Preserve generic structure („left hand“ & „right hand“ statements)
- Parse mathematical expressions (XML<->code)

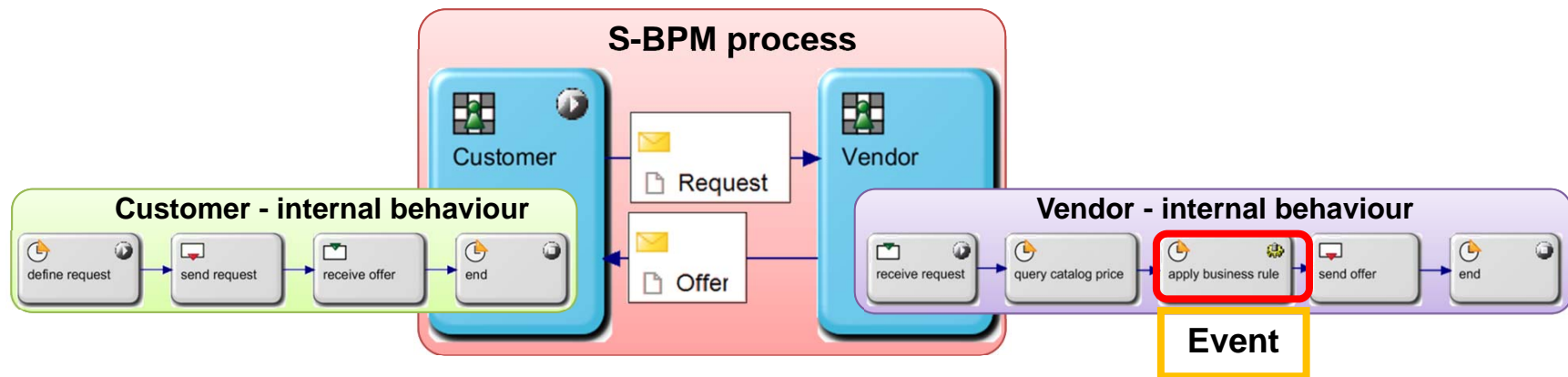
## Technical Implementation

- Metasonic S-BPM suite: workflow engine (Metasonic Build)
- MS BizTalk 2009: rules engine/repository

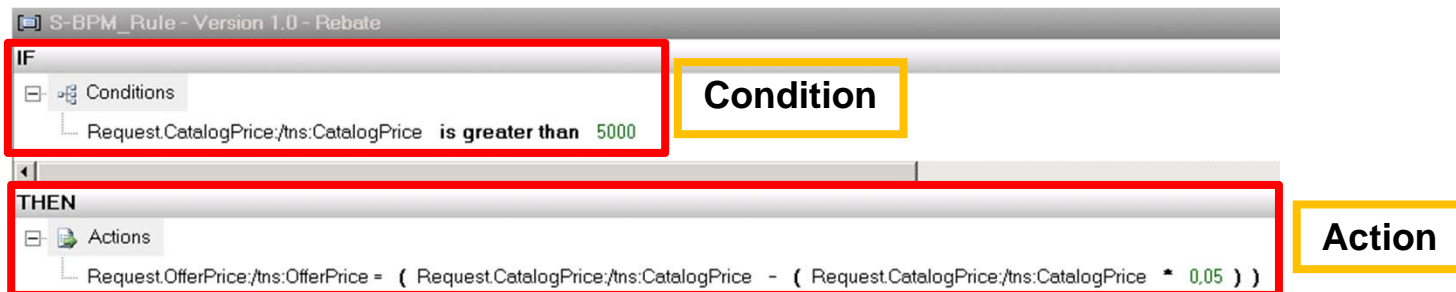


## Semantic definitions & models

**Process:** *Customer sends a request. Vendor creates an offer.*



**Rule:** *If the amount of an order exceeds \$5000, a rebate of 5% is granted.*



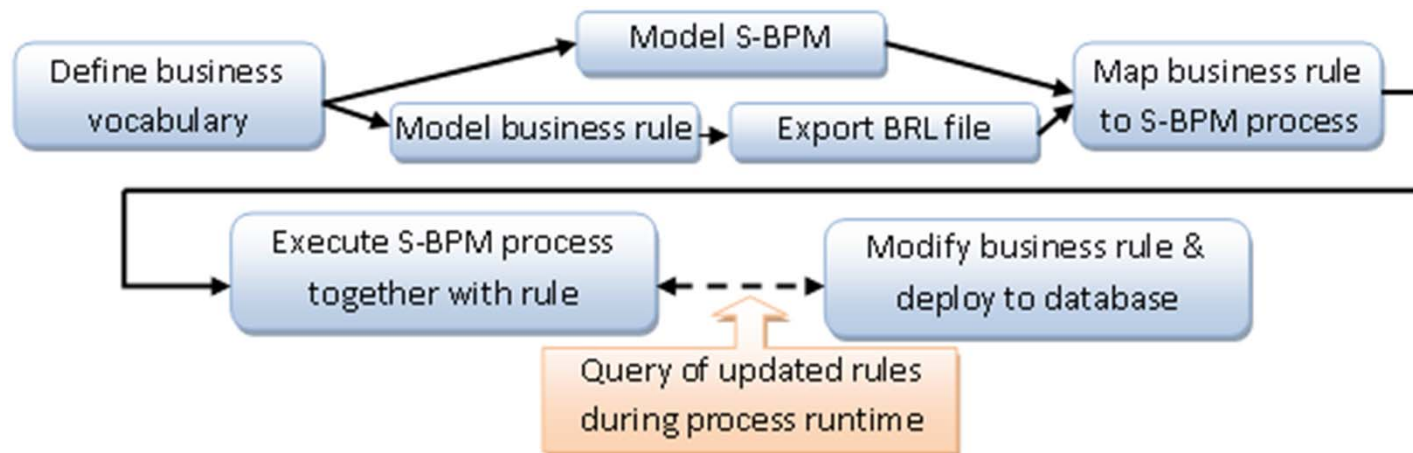
## From XSD via BRL to Java Code

The image illustrates the workflow from XSD to Java code, showing several overlapping windows:

- Schema Explorer:** Displays an XSD schema for a request. The schema includes elements like 'Article', 'Product', 'Offer', and 'Amou'.
- Policy Explorer:** Shows a tree structure of policies, including 'S-BPM\_Rule' and 'Rebate'.
- BRL Dialog:** A window titled 'Wählen Sie eine BRL XML Datei aus!' (Select a BRL XML file) with a file list and a 'Verzeichnisbaum' (Directory tree) view.
- Java Code Snippet:** A code block showing the logic for applying a BRL rule. It includes comments like '//apply BR' and '//format new value', and uses methods like 'doc.getDocumentElement()', 'updateNode.setTextContent()', and 'System.out.println()'.

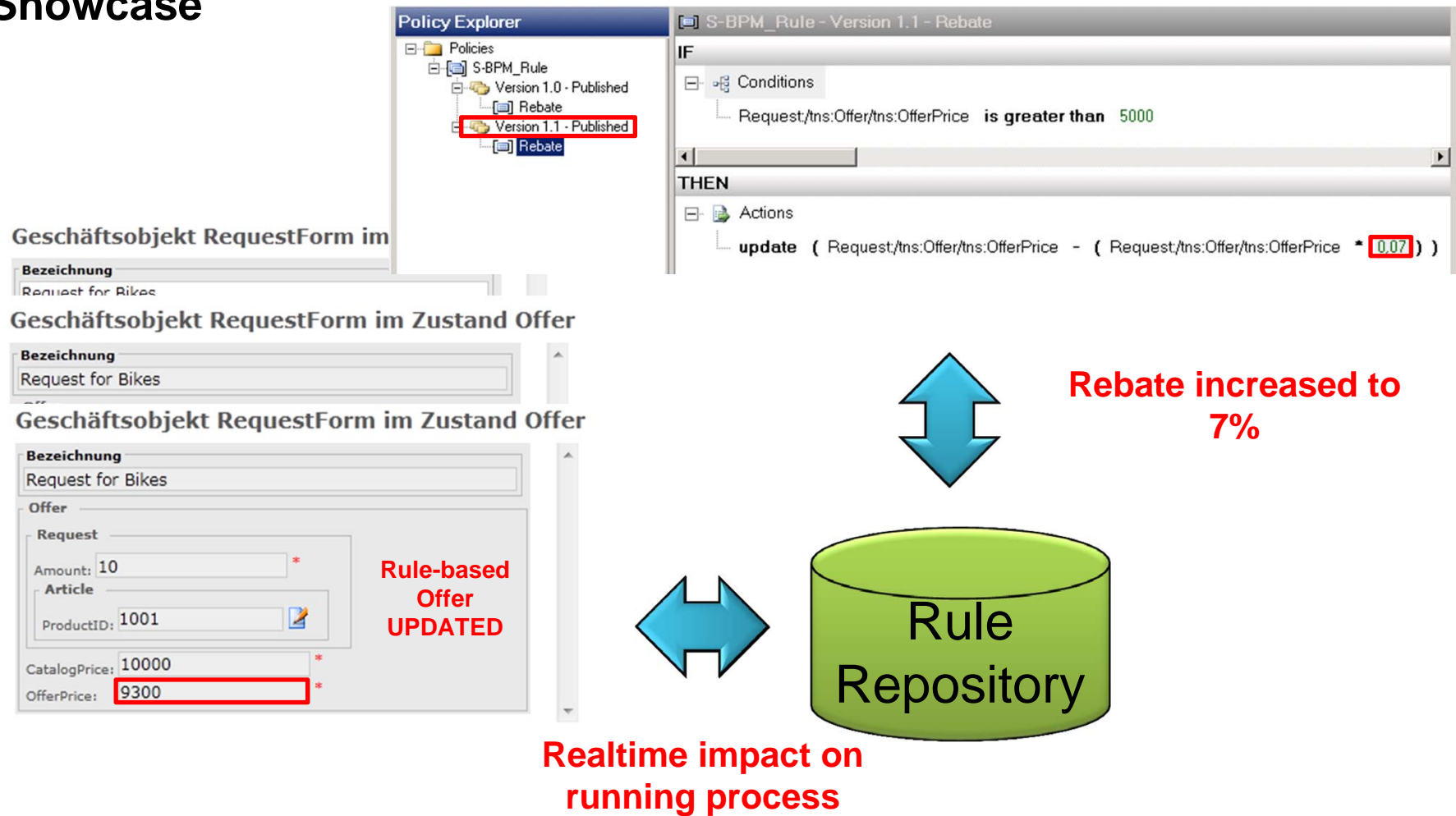


## Overall Procedure



- Initial definition business vocabulary required
- Simultaneous & independent modeling of processes and rules
- Queries for modifications to rule repository during process runtime

## Showcase



## Advantages

- Ideal in decision intensive and process driven environments
- Quickly understandable & easy to learn approaches (natural language)
- Direct connection between business and IT (SOA compliant)
- Dynamic scenarios for implementation
- Suited for cloud computing environments (facing security aspect)



## Challenges

### **Supported standards, compatibility and difference of concepts**

- Conversion between BRM or BPM data formats
- Conceptual difference between BPM and BRM
- Different responsibilities regarding rules and processes

### **Definition of complex business vocabulary**

- Initial definition - Comprehensive BV or only basic wording?
- Applicability in real-life use cases (time-consuming!)
- Syntactical correctness

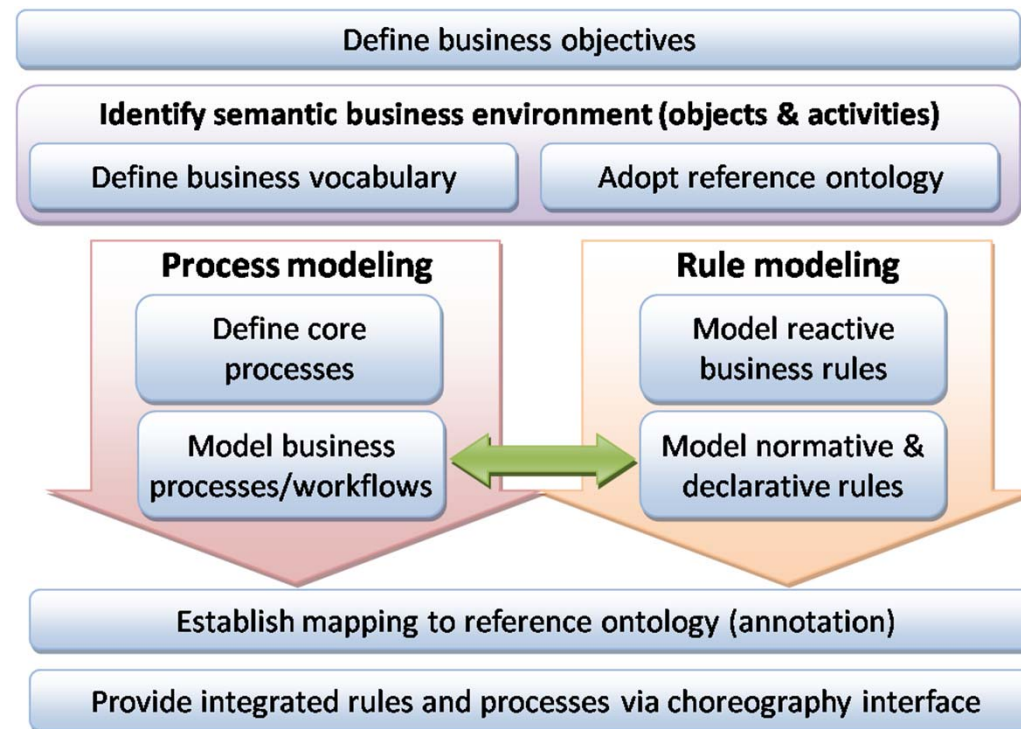
### **Gaps between process definitions and business vocabulary**

- Gaps regarding the semantic definitions of rules and processes
- Auxiliary methods needed to bridge these gaps
- Semantic dependencies between normative and declarative rules



## Further steps

- Link BPM and BRM using enterprise ontologies as organizational dictionary
- Achieve further independence from modeling environments



## Academic Background

### EEI – Enterprise Engineering & Integration

#### Student Project

*Business Process & Rules Repository*



#### Publication

*Establishing a procedure model for combining and synergistically aligning business rules and processes within ontologies (Sellner, Paschke, Zinser)*

#### Ongoing PhD Theses

- *Linking BPM and BRM through enterprise ontologies (Alexander Sellner)*
- *Semantic Outsourcing Relationship Management (Christopher Schwarz)*

# Thank you!

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